



Department of Commerce

Safety & Buildings Division

201 West Washington Avenue

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Evaluation #

200105-W Revised
(Replaces 950055-W)

Wisconsin Building Products Evaluation

Material

GPI Wood I Beam™ Joist

Manufacturer

Georgia-Pacific Corporation
1000 North Park Drive
Roxboro, NC 27573

SCOPE OF EVALUATION

The GPI Wood I-Beam™ Joists manufactured by Georgia-Pacific Corporation, were evaluated for use as floor joists, rafters, blocking panels and rim joists in accordance with **s. Comm 21.02 (3)(a)** and **21.19** of the current Uniform Dwelling Code (UDC). And in accordance with **ss. Comm 53.60** and **53.61 (2)** of the current edition of the Wisconsin Administrative Building And Heating, Ventilating And Air Conditioning Code.

DESCRIPTION AND USE

GPI Wood I-Beam™ joists are used in residential and light commercial construction as either joists or rafters.

GPI Joists are manufactured in an “I” section using a G-P Lam® laminated veneer lumber (LVL) flanges and oriented strand board (OSB) web. The machined web is joined to the flange by inserting the tapered web edge into a tapered, flat-bottomed groove routed down the middle of the flange wide face. The web-to-web joint, a modified tongue-and-groove, occurs at 4-foot intervals along the joist length. Webs are cut and positioned in the joist such that the OSB face strands are oriented perpendicular to the long joist direction.

GPI Joist web-to-flange and web-to-web joints are bonded together using a full exterior durability

phenol resorcinol formaldehyde (PRF) adhesive. The PRF adhesive is a room temperature setting product.

Materials:

1. Flanges: Joist flanges are manufactured from G-P Lam® laminated veneer lumber (LVL) according to the Georgia-Pacific Corporation manufacturing standards. G-P Lam LVL flanges are 1 1/2 inches thick. Flange species include Southern Yellow Pine for the GPI 15SP, 25SP, 35SP, and 55SP, Yellow Poplar for the GPI 15YP, 25YP, 35YP, 40YP, and a mixed species of Southern Yellow Pine and Yellow Poplar identified as Eastern Species for the GPI 25ES.
2. Webs: GPI joist web material is either 3/8- or 7/16-inch thick OSB which complies with Evaluation Report No. NER-108 for a Structural I (Exposure I) panel grade and the G-P manufacturing standards.
3. Adhesive: Adhesives are exterior type which comply with ASTM D2559 and as further specified in the G-P manufacturing standards.

Design: GPI joist shall be designed in accordance with the information contained in **Table Nos. 2** through **11** using the details and information **Figure Nos. 1-3**. Bearing or web stiffeners are not required unless specifically noted in details F15-F18, F21, F24, F25, R1, R4, , R6, and R8. Holes are permitted in the joist web as prescribed in the allowable hole chart in **Table No. 11**.

Continuous lateral support of the top (compression) flange of the GPI joist shall be provided using diaphragm sheathing attached to the top flange or an equivalent. Joist ends must be restrained to prevent rollover. This is normally provided by diaphragm sheathing attached to the top flange and to an end wall or shear transfer panel capable of transferring a force of 50 pounds per foot. Blocking or cross bracing providing equivalent strength is permitted to be used.

Bridging is not required in GPI floor and roof joist applications. Bracing is required during joist installation and construction.

Joists qualifying as repetitive members according to the applicable code, are permitted to have allowable bending moment increased 4 percent.

Nails installed perpendicular to the LVL glue lines can use the same allowable values as permitted for Douglas fir-larch sawn lumber in the 1991 Edition of the National Design Specification for Wood Construction (NDS). Allowable load values have not been assigned for bolts or nails driven parallel to the glue lines.

Joist under load bearing walls, perpendicular to the joist shall have full-depth blocking panels or squash block members to transfer gravity loads from above to the wall or foundation below. See floor details F2, F4, F7, F9 and F10. The maximum allowable vertical load associated with these details is 2,000 pounds per lineal foot (plf), except that the one-piece sheathing option of detail F5 is limited to single-story applications where the applied vertical load does not exceed 1,000 plf. **Floor-to-wall and diaphragm connection details are beyond the scope of this report.**

Concentrated loads must be applied to the top flange only of the joist. When these loads exceed 1,000 pounds, web stiffeners are required and must be installed in accordance with detail F18 and F21 except that the end gap shall be next to the bottom flange away from the concentrated load.

Bearing stiffeners are required at supports of (1.) reinforced cantilevers in accordance with details F24 and F25, (2.) hangers requiring side nailing and (3.) hangers with sides not containing top flange of joist and (4.) birdsmouth cut rafters in accordance with details R4, R6, and R8.

Double joists are to be designed using **Table No. 2** design properties and connected as required in detail F11 and F25.

TESTS AND RESULTS

Test data submitted and on file with the department includes:

- PFS Corporation test report on GPI joist bearing and shear tests in accordance with ASTM D5055.
- Georgia-Pacific Corporation's report on vertical load transfer tests on GPI joist.
- Georgia-Pacific Corporation's Quality Control Manual for GPI joist.
- Test Report and analysis on joist moment capacity, creep and shear performance and hole tests.
- Report of a 1-hour fire endurance assembly for GPI joist using the component additive method (CAM) principles.
- Georgia-Pacific Corporation's analysis of concentrated load tests on GPI joist.
- Technical Section 4.2 of the GP-Lam® Laminated Veneer Lumber Quality Control Manual.
- GPI joist are manufactured at Georgia-Pacific Corporation's Engineered Lumber Plant in Roxboro, North Carolina with quality control inspections by PFS Corporation (NER-QA251).
- All analysis of qualification test data and derivation of allowable design properties are signed and sealed.

ONE-HOUR FIRE-RESISTIVE CEILING ASSEMBLIES

1. Assembly consists of GPI joist spaced a maximum of 24 inches on center used in lieu of the wood joists specified in Assembly File No. FC 5406 as specified in the Gypsum Association Fire Resistance Design Manual, Fourteenth Edition (1994). Descriptions for other assemblies are noted below, and details for all assemblies are described in **Figure No. 3**.
2. A single layer floor of 5/8- or 3/4-inch tongue-and-groove plywood or 23/32-inch tongue-and-groove APA-rated Sturd-I-floor (Exposure 1) with joist spaced a maximum of 24 inches on center and a ceiling of two layers of 1/2-inch type C gypsum wallboard. A lightweight concrete topping may be applied over the plywood or Sturd-I-Floor. The topping shall be 3/4 inch thick or thicker and follow the Georgia-Pacific architectural specification and the topping manufacturer's guidelines. The flooring shall be installed with the long direction perpendicular to the joists with end joints centered over the top flange of the I-joist and staggered. Flooring shall be applied in accordance with the specifications and recommendations provided by the APA and shall be nailed with 8d nails spaced a maximum of 6-inches on center along the boundary and edges and 12 inches on center in the field. GPI joist shall have a minimum depth of 9-1/4 inches and application should follow the installation details contained herein. Holes may be cut into the web in accordance with the hole chart in **Table No 11**. The gypsum wallboard is attached directly to the I-joist and shall be installed with the long direction perpendicular to the joist. The ceiling is constructed as follows:
 - **Wallboard Layer 1:** The first 1/2-inch layer of gypsum wallboard is attached directly to the bottom chord of the I-joist using 1 1/4-inch Type S bugle-head screws spaced 6 inches on center along wallboard ends and edges, 12 inches on center in the field. The application of the Type C gypsum wallboard shall follow the manufacturer's installation instructions. The wallboard end joints shall be centered on the bottom flange of the I-joists, and shall be staggered. The minimum end distance (distance in from 4-feet of wallboard, i.e., butt end) allowed for the base layer is 1/2- inch. The minimum edge distance (distance in from 8 feet, 10 feet, etc., side of wallboard) is 1-1/2-inch.
 - **Wallboard Layer 2:** This layer of 1/2-inch Type C gypsum wallboard is then attached through the layer 1 gypsum wallboard into the I-joists. Layer 2 is attached with 1 7/8-inch Type S screws spaced at a minimum

of 6-inches on center. The end joints of each gypsum wallboard shall be offset 24 inches from layer one. End distance shall be a minimum of ½-inch. Edge distance shall be a minimum of 1-inch.

All screws shall be set so that they are flush with the face of the wallboard and do not damage the core of the wallboard. Type S bugle head screws that are self-drilling and self-tapping shall be used. Screws shall meet ASTM C1002 or ASTM C954. Wall board joints shall be covered with tape and coated with joint compound. Screws shall also be covered with joint compound.

3. A single layer floor of 5/8- or 3/4-inch tongue-and-groove plywood or 23/32-inch tongue-and-groove APA-rated 1/2-inch type C gypsum wallboard. A lightweight concrete topping may be applied over the plywood or Sturd-I-Floor. The topping shall be ¾-inches thick or thicker and follow the Georgia-Pacific architectural specification and the topping manufacturer's guidelines. The flooring shall be installed with the long direction perpendicular to the joists with end joints centered over the top flange of the I-joist and staggered. Flooring shall be applied in accordance with the specifications and recommendations provided by the APA and shall be nailed with 8d nails spaced a maximum of 6 inches on center along the boundary and edges and 12 inches on center in the field. GPI joist shall have a minimum depth of 9-1/4 inches and application should follow the installation details contained herein. Holes may be cut into the web in accordance with the hole chart in **Table No. 11**. The gypsum wallboard attached to the furring channels shall be installed perpendicular to the channels. The ceiling is constructed as follows:
 - **Furring Channel:** Resilient or inverted hat-type furring channels are attached to the bottom flange of each joist. The channels are 25 gauge (0.24 inches thick) galvanized steel, installed perpendicular to the structural members. The channels are spaced at a maximum of 16 inches on center, and attached to each I-joist with one 1-7/8-inch Type S screws.
 - **Wallboard Layer 1:** The base layer of the Type C gypsum wallboard is attached to the furring or resilient channels. This layer is attached with 1- or 1-1/4-inch Type S screws spaced a maximum of 8-inches on center along the end joints. The end joints of each gypsum wallboard shall be centered on the furring or resilient channel. End distance shall be a minimum of ½-inch. Edge distance shall be a minimum of 1-inch.
 - **Wallboard Layer 2:** The finish layer of 1/2-inch Type C gypsum wallboard shall be attached to each furring or resilient channel with 1-5/8- or 1-7/8-inch Type S screw that passes through wallboard layer 1. The screws shall be spaced at a maximum of 8-inches on center. End and edge distance shall be a minimum of 1-inch. The end and edge joints of the finish layer of gypsum shall be staggered at a minimum of 24 inches from the joints that exist in layer 1. The end joints of the face layer shall be centered on the furring channels. If this is not the case, end joints shall be attached to Wallboard Layer 1 with 1-1/2- type G screws spaced 8-inches on center with an end and edge distance of 1-1/2 inches.

All screws shall be set so that they are flush with the face of the wallboard and do not damage the core of the wallboard. Type S bugle head screws that are self-drilling and self-tapping shall be used. Type G wallboard screws can also be used. Screws shall meet ASTM C1002 or ASTM C954 standards. Wallboard joints shall be covered with tape and coated with joint compound. Screws shall also be covered with joint compound.

Table No. 1 - Joist Description ⁽¹⁾

GPI Joist Series ⁽²⁾	Flange		Web	Depth (inches)
	Size (inches)	Material	Material	
GPI 15SP	1.5 x 1.5	G-P Lam LVL	3/8" OSB	9-1/2, 11-7/8
GPI 25SP	1.5 x 1.75	G-P Lam LVL	3/8" OSB	See note 3
GPI 35SP	1.5 x 2.3125	G-P Lam LVL	3/8" OSB	11-7/8, 14, 16
GPI 55SP	1.5 x 3.5	G-P Lam LVL	7/16" OSB	11-7/8, 14, 16
GPI 15YP	1.5 x 1.5	G-P Lam LVL	3/8" OSB	9-1/2, 11-7/8
GPI 25YP	1.5 x 1.75	G-P Lam LVL	3/8" OSB	9-1/2, 11-7/8

GPI 35YP	1.5 x 2.3125	G-P Lam LVL	3/8" OSB	See note 3
GPI 40YP	1.5 x 2.5	G-P Lam LVL	3/8" OSB	11-7/8, 14, 16
GPI 25ES	1.5 x 1.75	G-P Lam LVL	3/8" OSB	9-1/2, 11-7/8

Notes:

- (1) Flange grades and GPI joist design properties defined in **Table No. 2**.
- (2) ES indicates Eastern Species flange which is a mixture of Yellow Poplar and Southern Yellow Pine.
- (3) GPI 25SP and GPI 35YP depths include 9 1/4", 9 1/2", 11 1/4", 11 7/8" 14" and 16".

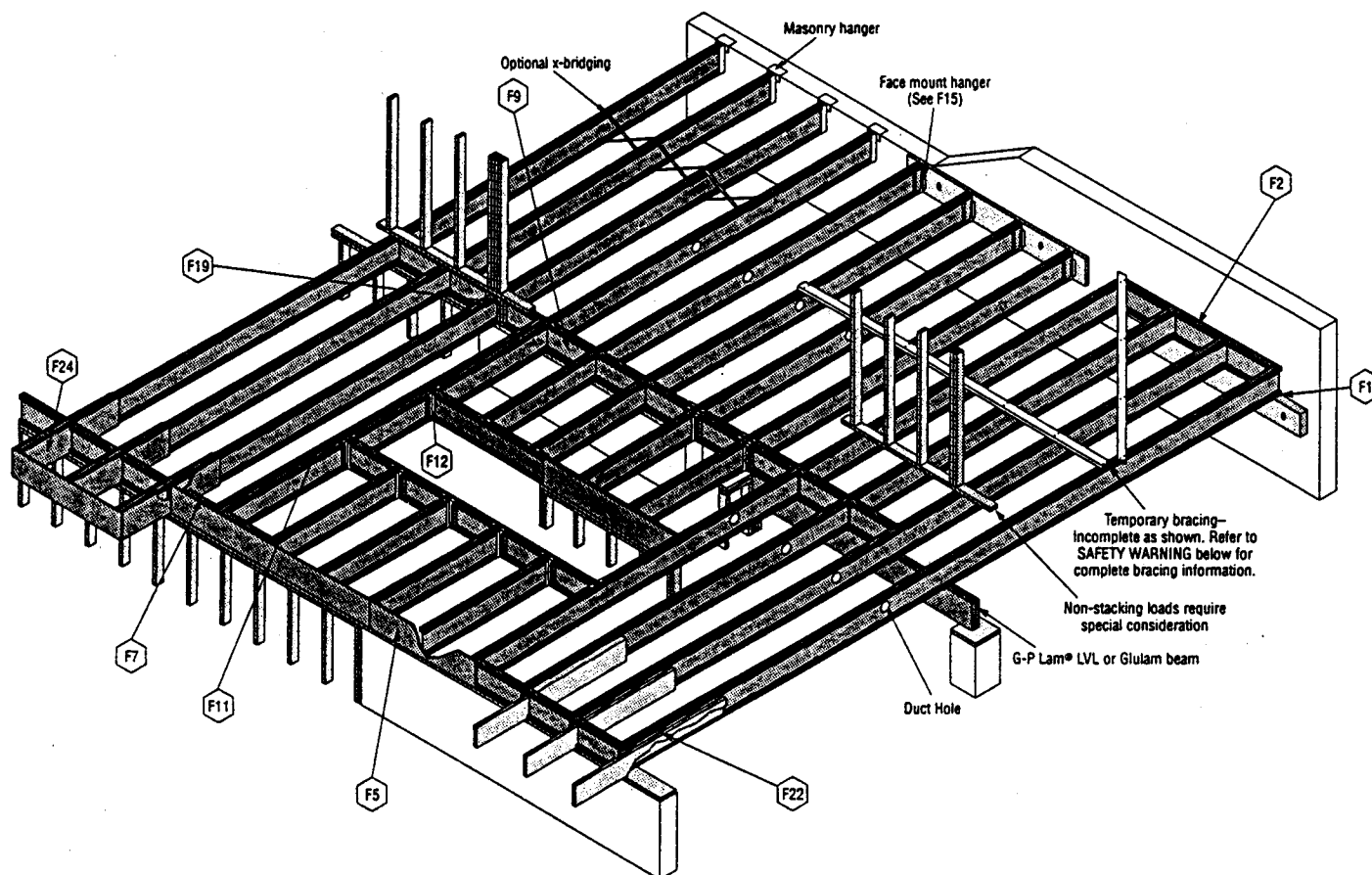
Table No. 2 - Design Properties for GPI Joists

Joist Series	Joist Depth	Joist Weight (lbs/ft)	Allowable Moment (ft-lbs)	Allowable Shear (lbs)	Allowable		EI (10 ⁶ in ² -lbs)	C (10 ⁶ ft-lbs/in)
					Exterior (lbs)	Interior (lbs)		
GPI 15SP	9 1/2"	2.1	2865	1125	965	2105	176	.408
	11 7/8"	2.4	3805	1425	965	2105	304	.506
GPI 25SP	9 1/4"	2.3	3250	1095	995	2120	191	.401
	9 1/2"	2.3	3370	1125	995	2120	204	.412
	11 1/4"	2.5	4200	1350	995	2120	307	.488
	11 7/8"	2.6	4490	1425	995	2120	350	.512
	14"	2.8	5510	1710	995	2120	521	.602
	16"	3.1	6450	1970	995	2120	717	.693
GPI 35SP	11 7/8"	3.0	6010	1425	1250	2500	452	.515
	14"	3.3	7380	1710	1250	2500	667	.607
	16"	3.5	8670	1970	1250	2500	913	.693
GPI 55SP	11 7/8"	4.2	9160	1930	1540	3680	640	.613
	14"	4.5	11205	2130	1540	3680	952	.716
	16"	4.8	13150	2330	1540	3680	1310	.814
GPI 15YP	9 1/2"	1.9	2850	1125	965	2105	145	.408
	11 7/8"	2.2	3800	1425	965	2105	253	.506
GPI 25YP	9 1/2"	2.1	3295	1125	995	2120	185	.412
	11 7/8"	2.4	4375	1425	995	2120	315	.515
GPI 35YP	9 1/4"	2.5	3735	1095	1250	2500	205	.401
	9 1/2"	2.5	3875	1125	1250	2500	219	.412
	11 1/4"	2.7	4830	1350	1250	2500	329	.488
	11 7/8"	2.8	5165	1425	1250	2500	375	.515
	14"	3.1	6335	1710	1250	2500	560	.607
	16"	3.3	7440	1970	1250	2500	770	.693
GPI 40YP	11 7/8"	2.9	5680	1425	1350	2750	415	.515
	14"	3.2	6970	1710	1350	2750	620	.607
	16"	3.4	8185	1970	1350	2750	860	.693
GPI 25ES	9 1/2"	2.2	3295	1125	995	2120	185	.412
	11 7/8"	2.5	4375	1425	995	2120	315	.515

Notes:

1. Design properties are for dry conditions of use where in-service moisture content does not exceed 16 percent.
2. Allowable moment values may be increased 4% for repetitive usage (3 joists minimum at 24 inches o.c. spacing or less).
3. Joist design properties are based on 2.2 E G-P Lam@ LVL for SP flanges, 2.0E G-P Lam LVL for GPI 25YP, GPI 40YP and GPI 25ES and 1.8E G-P Lam LVL for GPI 15YP and GPI 35YP. A transformed section flange or other flange grades are permitted if substantiated by engineering calculations.
4. Allowable moment and shear are for normal duration loading. They may be increased for other load duration in accordance with the code.
5. Allowable exterior reaction is based on a minimum bearing length of 1-3/4 inches without bearing stiffeners.
6. Allowable interior reaction is based on a minimum bearing length of 3-1/2 inches without bearing stiffeners.

Figure 1 - TYPICAL GPI JOIST FLOOR FRAMING



Floor Framing Notes

- Except for cutting to length, top and bottom flanges of Wood I Beam joists shall not be cut, drilled or notched.
- Concentrated loads shall only be applied to the upper surface of the top flange, not suspended from the bottom flange.
- Any fastening, resistance to uplift or member not specifically detailed is subject to local approval.
- When nailing sheathing to top flange, closest spacings should be as follows: Space 8d, 10d, and 12d box nails and 8d common nails no closer than 2" o.c. per row (3" o.c. for GPI 15). If more than one row of nails is used (permitted only on GPI 25, GPI 35, GPI 40YP and GPI 55 series joists), the rows must be offset at least 1/2". 14-gauge staples may be substituted for 8d nails if the staples penetrate the beam flange at least 1".
Maximum spacing of nails is 16" o.c. for GPI 15 Series joists, 18" o.c. for GPI 25 Series joists, and 24" o.c. for GPI 35, GPI 40YP and GPI 55 Series joists.
- End bearing length must be at least 1 3/4". Intermediate bearings of multiple span joists shall be at least 3.5" long.**
- Engineered lumber must **not remain** in direct contact with masonry construction.
- Wood I Beam joists must be **restrained against rotation at the ends** by the use of rim joists, blocking panels, or cross bridging. To laterally support cantilevered beams, blocking panels must also be installed over supports nearest the cantilever.
- Additionally, **rim joists, blocking panels or squash blocks** must be provided under all exterior walls and interior bearing walls to transfer loads from above to the wall or foundation below.
- The top flanges must be kept straight within 1/2" of true alignment.

7. Allowable shear is based on a 4-inch bearing length without bearing stiffeners, except for the GPI 25SP 16 inch joist which requires stiffeners at an allowable shear in excess of 1450 pounds.
8. Reactions may be further limited by the allowable bearing stress of the supporting member.

$$\text{APPROXIMATE UNIFORM LOAD DEFLECTION}^* = \frac{22.5wL^4}{EI} + \frac{wL^2}{C} \quad \text{Where:}$$

w = uniform load (lbs/foot)

L = effective span (feet)

EI = stiffness constant

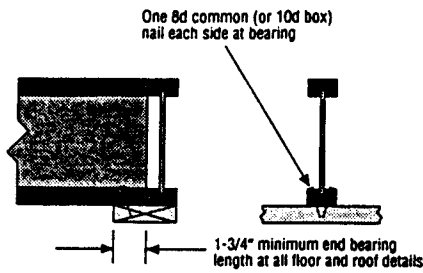
C = Shear deflection constant

*Constants have been adjusted to maintain unit consistency

Figure 1 - TYPICAL GPI JOIST FLOOR FRAMING

FIGURE 1 – CONTINUED – FLOOR DETAILS

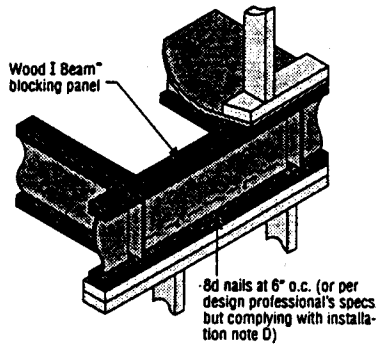
F1 ATTACHMENT AT END BEARING



To avoid splitting flange, start nails at least 1-1/2" from end. Nails may need to be driven at an angle to prevent splitting of bearing plate.

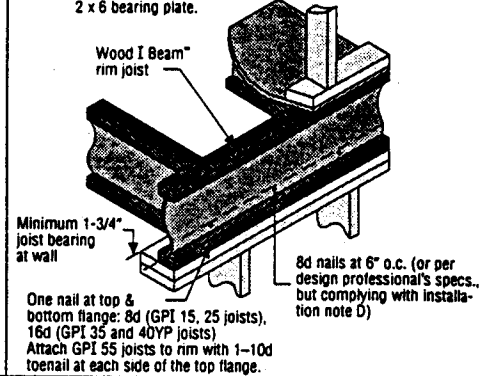
F2 BLOCKING PANEL, EXTERIOR

Vertical load transfer = 2000 plf max.



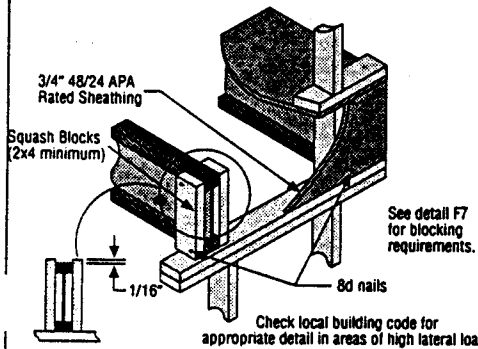
F3 WOOD I BEAM™ RIM JOIST

Vertical load transfer = 2000 plf max.
GPI 35, 40YP and 55 require a minimum 2 x 6 bearing plate.



F4 SQUASH BLOCKS & SINGLE RIM

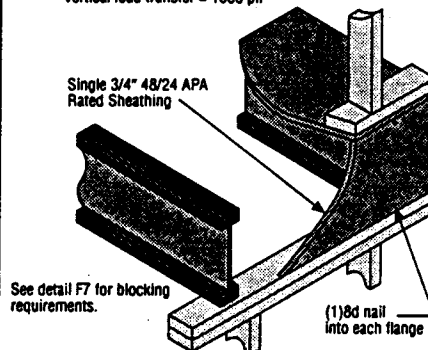
Vertical load transfer = 2000 plf max.
along load bearing wall based on bearing stress of 390 psi and maximum joist spacing of 24" o.c.



Check local building code for appropriate detail in areas of high lateral load.

F5 SINGLE SHEATHING RIM

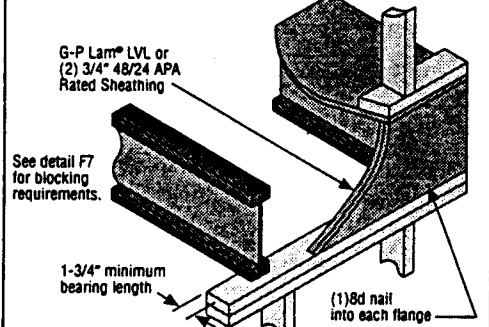
Limited to single-story applications.
Vertical load transfer = 1000 plf



Check local building code for appropriate detail in areas of high lateral load.

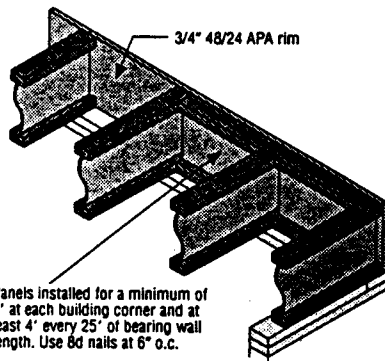
F6 DOUBLE SHEATHING RIM

Maximum vertical load transfer = 2000 plf (5000 plf if 1-3/4" G-P Lam® LVL)



Check local building code for appropriate detail in areas of high lateral load.

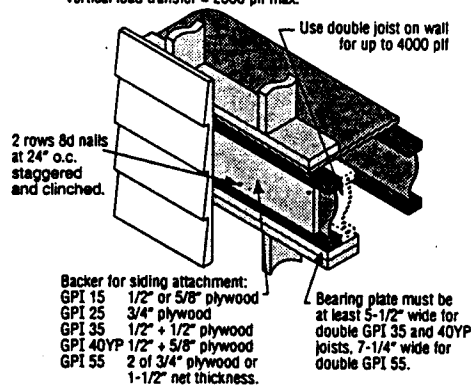
F7 BLOCKING PANELS USED FOR BRACING



Check local building code for appropriate detail in areas of high lateral load.

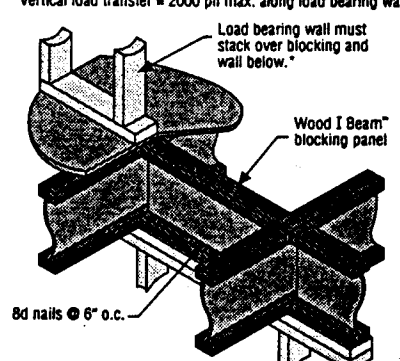
F8 JOIST AT EXTERIOR END WALL

Vertical load transfer = 2000 plf max.



F9 BLOCKING PANEL, INTERIOR

Vertical load transfer = 2000 plf max. along load bearing wall.

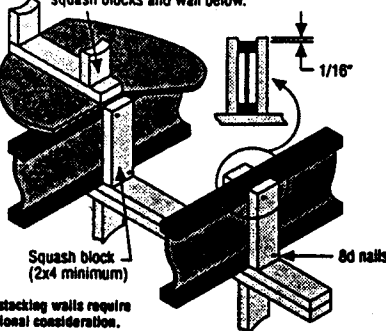


*Non-stacking walls require additional consideration.

F10 SQUASH BLOCKS AT INTERIOR BEARING

Vertical load transfer = 2000 plf max along load bearing wall when joist spacing does not exceed 24"

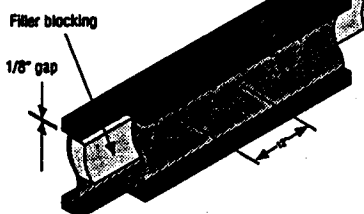
Load bearing wall must stack over squash blocks and wall below.*



*Non-stacking walls require additional consideration.

F11 DOUBLE JOIST CONSTRUCTION

- 1) Support back of web during nailing to prevent damage to web-flange connection.
- 2) Leave 1/8" gap between top of filler blocking and bottom of top flange.
- 3) Block solid between joists for full length of span.
- 4) Butt joists and nail together with two rows of 10d nails at 12" o.c. (staggered and clinched) each side of double Wood I Beam™ joist.



Joist	Regular Filler Blocking Use in details F12 & F25	Full-depth Filler Blocking Use in details F13 & F14
GPI 15	9-1/2" 11-7/8"	1/2" + 5/8" plywood (6" high) 1/2" + 5/8" plywood (6" high)
GPI 25	9-1/4" 9-1/2" 11-1/4" 11-7/8" 14" 16"	2 x 6 2 x 6 2 x 6 2 x 8 2 x 10 2 x 12
GPI 35	11-7/8" 14" 16"	2 x 8 + 1/2" plywood 2 x 10 + 1/2" plywood 2 x 12 + 1/2" plywood
GPI 40YP	11-7/8" 14" 16"	2 x 8 + 5/8" plywood 2 x 10 + 5/8" plywood 2 x 12 + 5/8" plywood
GPI 55	11-7/8" 14" 16"	2-2 x 8 2-2 x 10 2-2 x 12

FIGURE 1 – CONTINUED – FLOOR DETAILS

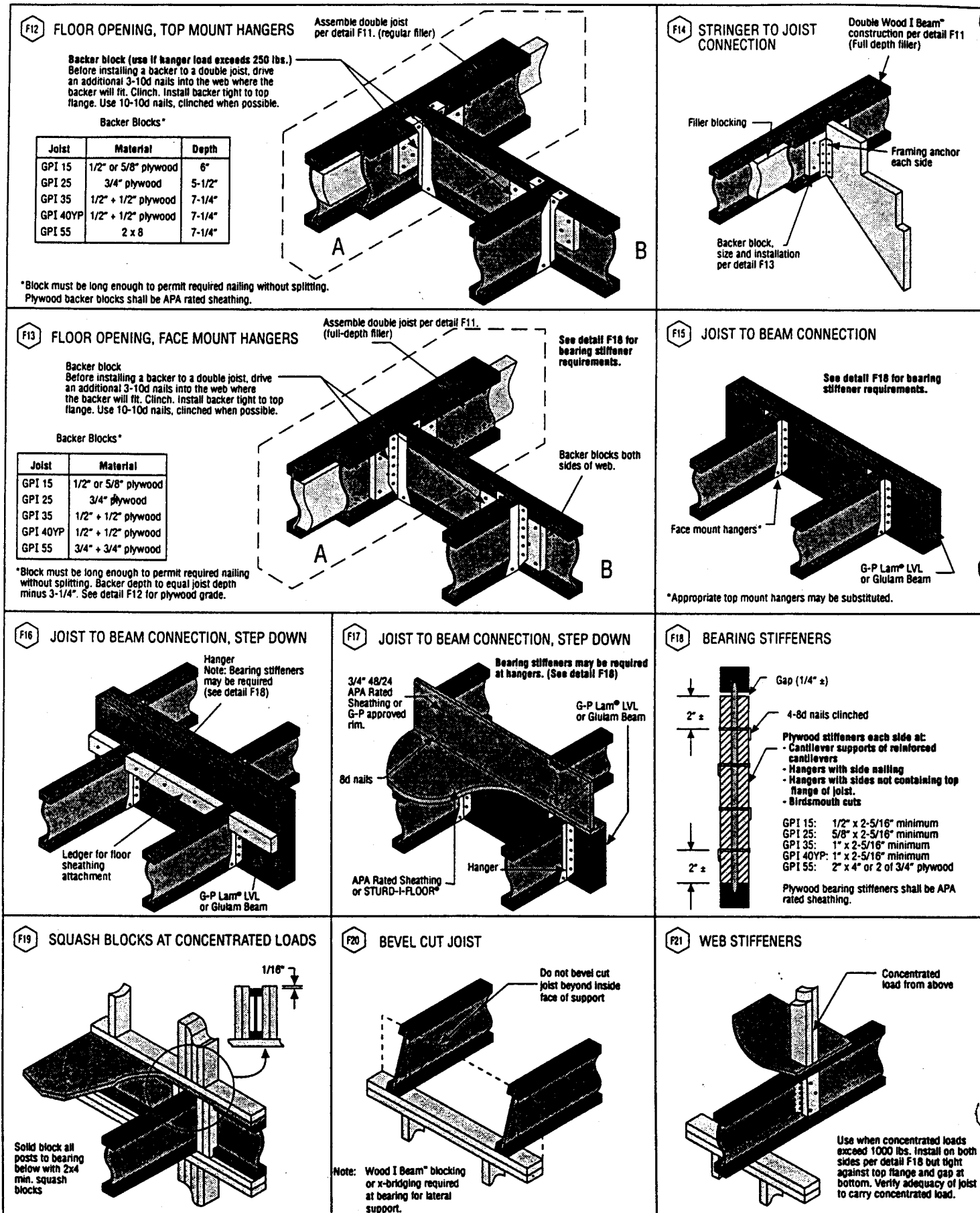
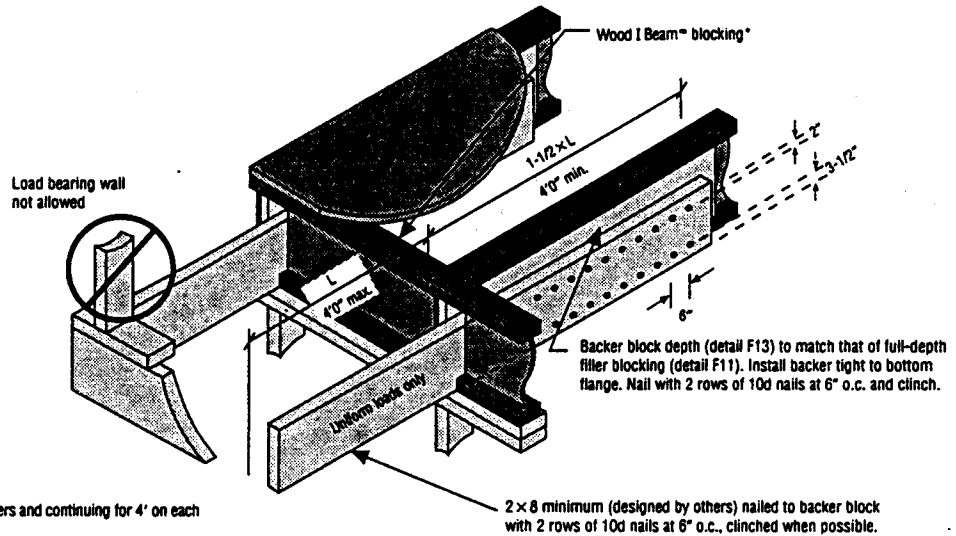


FIGURE 1 – CONTINUED – NON-LOAD BEARING CANTILEVER DETAILS

F22

CANTILEVER, DROPPED

Note: Uniform floor load not to exceed 40psf LL and 10 or 20 psf DL.



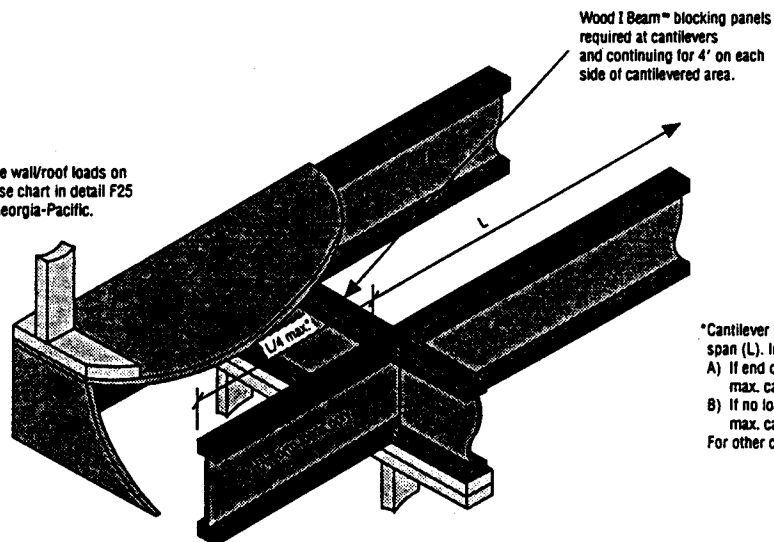
F23

CANTILEVER, UNREINFORCED

Note:

- Wood I Beam™ joists shall be protected from the weather.
- Uniform floor load not to exceed 40psf LL and 10 or 20 psf DL.

For allowable wall/roof loads on cantilever, use chart in detail F25 or contact Georgia-Pacific.



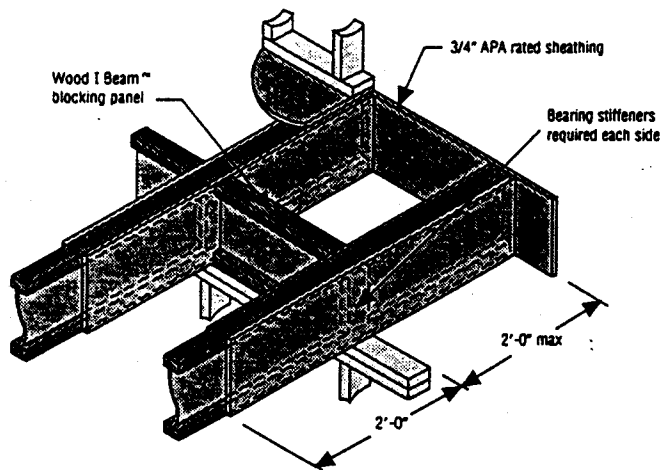
*Cantilever length may not exceed 1/4 the adjacent span (L). In addition:

- If end of cantilever supports wall/roof loads, max. cantilever length is 2'-0".
- If no loads are placed on end of cantilever, max. cantilever length is 4'-0".

For other conditions contact Georgia-Pacific.

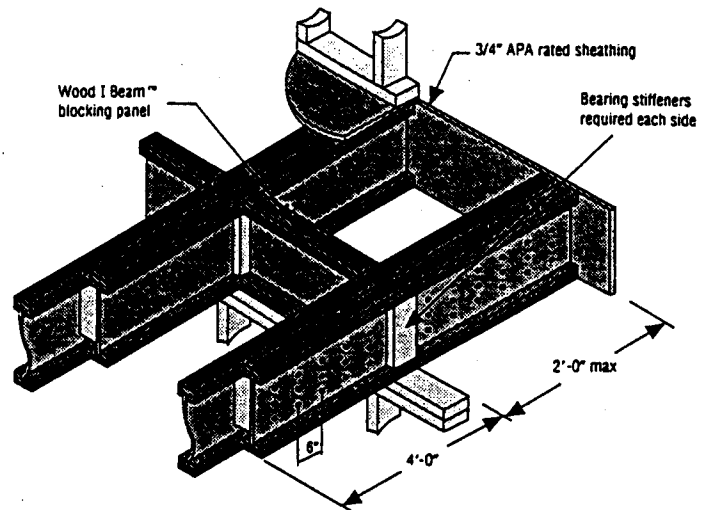
FIGURE 1 – CONTINUED – NON-LOAD BEARING CANTILEVER DETAILS

F24 CANTILEVER, REINFORCED
Double Sheathing (Option I)

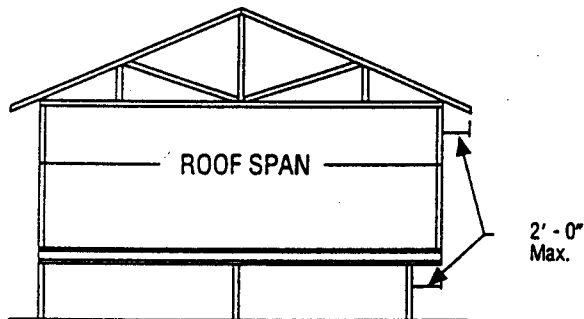


Note: 48/24 APA rated sheathing required both sides of joist. Depth must match the full depth of the joist. Install with face grain horizontal. Nail with 8d nails 6" o.c. Stagger nailing on opposite sides of flange to avoid splitting.

F25 CANTILEVER, REINFORCED (GPI 15, GPI 25 & GPI 35 ONLY)
Double Joist (Option II)



Note: Block together full length with regular filler blocking. See detail F11 for filler size. Nail through the web of the reinforcement joist, filler and web of the main joist with 3 rows of 10d nails at 6" o.c. and clinch. For GPI 15 and 25 series use 2 rows of 10d nails at 6" o.c. and clinch.



Wood I Beam™ joist reinforcement
may be required at cantilever.
See table.

REINFORCEMENT DESCRIPTION:

- A Not required
- B Required at 24" o.c.
- C Required at 19.2" and 24" o.c.
- D Required at 19.2" o.c.*
- E *Required at 19.2" o.c. and less*
- F Required at 16" o.c. and less*

*NOT PERMITTED AT GREATER SPACING.

GPI REINFORCEMENT REQUIREMENTS (OPTIONS I OR II)				
JOIST DEPTH	ROOF TRUSS SPAN	ROOF TOTAL LOAD		
		30 PSF	40 PSF	50 PSF
9 1/4" or 9 1/2"	26'	B	B	D
	28'	B	B	D
	30'	B	D	E
	32'	B	D	E
	34'	B	D	F
	36'	B	D	F
11 1/4" or 11 1/2"	26'	B	C	D
	28'	B	C	D
	30'	B	D	E
	32'	B	D	E
	34'	B	D	E
	36'	C	E	F
14"	26'	A	B	C
	28'	A	B	C
	30'	B	B	C
	32'	B	C	C
	34'	B	C	E
	36'	B	C	E
16"	26'	A	B	B
	28'	A	B	C
	30'	A	B	C
	32'	A	B	C
	34'	B	C	C
	36'	B	C	E
18"	26'	A	B	B
	28'	A	B	C
	30'	A	B	C
	32'	A	B	C
	34'	B	C	C
	36'	B	C	E
20"	26'	A	B	B
	28'	A	B	C
	30'	A	B	C
	32'	A	B	C
	34'	B	C	C
	36'	B	C	E
22"	26'	A	B	B
	28'	A	B	C
	30'	A	B	C
	32'	A	B	C
	34'	B	C	C
	36'	B	C	E
24"	26'	A	B	B
	28'	A	B	C
	30'	A	B	C
	32'	A	B	C
	34'	B	C	C
	36'	B	C	E

- Assumes a 10 psf roof dead load, 80 plf wall load, and spans for floor loading of 40 psf live and 10 psf dead.
- Applies to joist spacings of 24" o.c. and less.

TABLE No. 3-GPI® SERIES JOISTS – FLOOR SPAN CHARTS
GPI 15SP, 25SP, 35SP, and 55SP

40 PSF Live Load + 10 psf Dead Load									
Joist Series	Joist Depth	Spacing (Simple Spans)				Spacing (Multiple Spans)			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
GPI 15SP	9-1/2"	17'- 2"	15'- 8"	14'- 9"	13'- 9"	18'- 9"	17'- 1"	16'- 1"	15'- 0"
	11-7/8"	20'- 7"	18'- 9"	17'- 8"	16'- 6"	22'- 6"	20'- 6"	19'- 4"	16'- 7"
GPI 25SP	9-1/4"	17'- 6"	15'- 11"	15'- 1"	14'- 0"	19'- 2"	17'- 5"	16'- 5"	15'- 4"
	9-1/2"	17'- 11"	16'- 4"	15'- 4"	14'- 4"	19'- 7"	17'- 10"	16'- 10"	15'- 8"
	11-1/4"	20'- 6"	18'- 8"	17'- 8"	16'- 5"	22'- 5"	20'- 5"	19'- 4"	16'- 9"
	11-7/8"	21'- 5"	19'- 6"	18'- 5"	17'- 2"	23'- 5"	21'- 4"	20'- 2"	16'- 9"
	14"	24'- 6"	22'- 3"	21'- 0"	19'- 7"	26'- 9"	24'- 5"	21'- 0"	16'- 9"
	16"	27'- 3"	24'- 10"	23'- 5"	19'- 9"	29'- 10"	25'- 3"	21'- 0"	16'- 9"
GPI 35SP	11-7/8"	23'- 2"	21'- 1"	19'- 10"	18'- 5"	25'- 5"	23'- 1"	21'- 9"	19'- 9"
	14"	26'- 5"	24'- 0"	22'- 7"	21'- 0"	28'- 11"	26'- 4"	24'- 9"	19'- 9"
	16"	29'- 4"	26'- 8"	25'- 2"	23'- 4"	32'- 2"	29'- 3"	24'- 9"	19'- 9"
GPI 55SP	11-7/8"	26'- 3"	23'- 10"	22'- 5"	20'- 10"	28'- 9"	26'- 1"	24'- 7"	22'- 10"
	14"	29'- 10"	27'- 1"	25'- 6"	23'- 8"	32'- 9"	29'- 9"	28'- 0"	25'- 11"
	16"	33'- 1"	30'- 1"	28'- 3"	26'- 3"	36'- 4"	33'- 0"	31'- 0"	28'- 10"

40 PSF Live Load + 20 psf Dead Load									
Joist Series	Joist Depth	Spacing (Simple Spans)				Spacing (Multiple Spans)			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
GPI 15SP	9-1/2"	17'- 2"	15'- 8"	14'- 9"	13'- 9"	18'- 9"	17'- 1"	15'- 6"	13'- 10"
	11-7/8"	20'- 7"	18'- 9"	17'- 8"	15'- 11"	22'- 6"	19'- 8"	17'- 4"	13'- 10"
GPI 25SP	9-1/4"	17'- 6"	15'- 11"	15'- 1"	14'- 0"	19'- 2"	17'- 5"	16'- 5"	13'- 11"
	9-1/2"	17'- 11"	16'- 4"	15'- 4"	14'- 4"	19'- 7"	17'- 10"	16'- 10"	13'- 11"
	11-1/4"	20'- 6"	18'- 8"	17'- 8"	16'- 5"	22'- 5"	20'- 5"	17'- 5"	13'- 11"
	11-7/8"	21'- 5"	19'- 6"	18'- 5"	16'- 5"	23'- 5"	21'- 0"	17'- 5"	13'- 11"
	14"	24'- 6"	22'- 3"	20'- 7"	16'- 5"	26'- 9"	21'- 0"	17'- 6"	13'- 11"
	16"	27'- 3"	24'- 9"	20'- 7"	16'- 5"	28'- 1"	21'- 0"	17'- 6"	13'- 11"
GPI 35SP	11-7/8"	23'- 2"	21'- 1"	19'- 10"	18'- 5"	25'- 5"	23'- 1"	20'- 7"	16'- 5"
	14"	26'- 5"	24'- 0"	22'- 7"	20'- 8"	28'- 11"	24'- 9"	20'- 7"	16'- 5"
	16"	29'- 4"	26'- 8"	25'- 2"	20'- 8"	32'- 2"	24'- 9"	20'- 7"	16'- 5"

GPI 55SP	11'-7/8"	26'- 3"	23'- 10"	22'- 5"	20'- 10"	28'- 9"	26'- 1"	24'- 7"	22'- 10"
	14"	29'- 10"	27'- 1"	25'- 6"	23'- 8"	32'- 9"	29'- 9"	28'- 0"	24'- 4"
	16"	33'- 1"	30'- 1"	28'- 3"	25'- 6"	36'- 4"	33'- 0"	30'- 5"	24'- 4"

Notes:

1. Span charts are based on uniform loads, as noted above and glued/nailed sheathing;
live load deflection is limited to L/480.
2. Maximum spans shown above are clear distances between supports, and are based on composite action with glued nailed sheathing of 3/4" nominal APA rated OSB or plywood. **Minimum end bearing length is 1.75". Minimum intermediate bearing length is 3.5".**
3. Reduce spans by 10" for nailed sheathing only.
4. Exterior spans of multiple-span joists must be at least 40% of the adjacent span.
5. For loading other than shown above, refer to Uniform Load Tables.

TABLE No. 4- GPI 15SP, 25SP, 35SP, and 55SP LOAD TABLES
GPI SERIES JOIST ALLOWABLE UNIFORM LOADS – FLOOR

Pounds per lineal foot (PLF)

Joist Span (ft)	GPI 15SP				GPI 25SP											
	9-1/2"		11-7/8"		9-1/4"		9-1/2"		11-1/4"		11-7/8"		14"		16"	
	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load
6		271		271		273		273		273		273		273		273
7		233		233		235		235		235		235		235		235
8		205		205		206		206		206		206		207		207
9		183		183		184		184		184		184		184		184
10	158	165		165		166		166		166		166		166		166
11	122	150		150	131	151	139	151		151		151		152		152
12	97	138		138	104	139	110	139		139		139		139		139
13	77	127		127	83	128	89	128		128		128		129		129
14	63	118	105	118	68	119	72	119	106	119		119		120		120
15	52	103	87	111	56	111	60	111	88	111	99	111		112		112
16	43	87	73	104	47	93	50	99	73	105	83	105		105		105
17	36	73	61	98	39	79	42	84	62	98	70	98		99		99
18	31	62	52	92	33	67	36	71	53	93	60	93	87	93		93
19			45	86					45	88	51	88	75	88		88
20			39	77					39	78	44	84	65	84		84
21			34	67					34	68	39	77	56	80	76	80
22			29	59					30	59	34	67	49	77	67	77
23			26	52							30	59	44	73	59	73
24													39	70	52	70
26													31	61	42	65
28															34	60

Pounds per lineal foot (PLF)

Joist Span (ft)	GPI 35SP						GPI 55SP					
	11-7/8"		14"		16"		11-7/8"		14"		16"	
	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load
6		322		322		322		473		473		473
7		277		277		277		408		408		408
8		243		243		243		358		358		358
9		217		217		217		319		319		319
10		196		196		196		288		288		288
11		178		178		178		262		262		262
12		164		164		164		241		241		241
13		151		151		151		223		223		223
14		141		141		141	204	207		207		207
15	124	131		131		131	170	193		193		193
16	104	123		123		123	143	182		182		182
17	88	116		116		116	122	171		171		171
18	75	110	108	110		110	104	162	150	162		162
19	65	104	93	104		104	90	153	130	153		153
20	56	99	81	99		99	78	146	113	146		146
21	49	94	71	94		94	68	136	99	139	133	139
22	43	86	62	90	83	90	60	120	87	133	117	133
23	38	76	55	86	74	86	53	106	77	127	104	127
24			49	83	65	83			68	122	92	122
26			39	76	52	76			54	109	74	112
28					42	71					60	104

Uniform Load Table Notes:

1. Total load values are based on joists spaced 24" o.c. or less, with increased moment capacity for repetitive member usage. No increase is taken for composite action of glued and nailed sheathing. Table values are for single joist use only, double joists should be evaluated using design properties.
2. Live load values are based on limiting live load deflection to L/480 and total load deflection to L/240. When live load is not shown, total load governs.
3. Both Live Load and Total Load must be checked to properly size GPI Joists for use in a floor.
4. Spans are clear distance between supports. **Minimum end bearing length is 1.75".**
Minimum intermediate bearing length is 3.5".
5. Allowable loads shown may be used for simple or multiple spans. Exterior spans in multiple span applications must be at least 40% of adjacent spans.

TABLE No. 5-GPI® SERIES JOISTS – FLOOR SPAN CHARTS

GPI 15YP, 25YP, 35YP, 40YP and 25ES

40 PSF Live Load + 10 psf Dead Load									
Joist Series	Joist Depth	Spacing (Simple Spans)				Spacing (Multiple Spans)			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
GPI 15YP	9-1/2"	16'- 2"	14'- 9"	13'- 11"	13'- 0"	17'- 8"	16'- 1"	15'- 3"	14'- 2"
	11-7/8"	19'- 4"	17'- 8"	16'- 8"	15'- 7"	21'- 2"	19'- 4"	18'- 3"	16'- 7"
GPI 25YP	9-1/2"	17'- 5"	15'- 10"	15'- 0"	13'- 11"	19'- 0"	17'- 4"	16'- 4"	15'- 3"
	11-7/8"	20'- 10"	19'- 0"	17'- 11"	16'- 8"	22'- 9"	20'- 9"	19'- 7"	16'- 9"

GPI 35YP	9'-1/4"	17'- 10"	16'- 3"	15'- 4"	14'- 3"	19'- 6"	17'- 9"	16'- 9"	15'- 7"
	9'-1/2"	18'- 3"	16'- 7"	15'- 8"	14'- 7"	19'- 11"	18'- 2"	17'- 2"	15'- 11"
	11'-1/4"	20'- 11"	19'- 0"	17'- 11"	16'- 8"	22'- 10"	20'- 10"	19'- 8"	18'- 3"
	11'-7/8"	21'- 10"	19'- 10"	18'- 9"	17'- 5"	23'- 10"	21'- 9"	20'- 6"	19'- 1"
	14"	24'- 10"	22'- 8"	21'- 4"	19'- 10"	27'- 3"	24'- 9"	23'- 4"	19'- 9"
	16"	27'- 7"	25'- 2"	23'- 8"	22'- 0"	30'- 3"	27'- 6"	24'- 9"	19'- 9"
GPI 40YP	11'-7/8"	23'- 0"	20'- 11"	19'- 9"	18'- 4"	25'- 3"	22'- 11"	21'- 7"	20'- 1"
	14"	26'- 3"	23'- 10"	22'- 6"	20'- 10"	28'- 9"	26'- 2"	24'- 7"	21'- 9"
	16"	29'- 2"	26'- 6"	24'- 11"	23'- 2"	31'- 11"	29'- 1"	27'- 3"	21'- 9"
GPI 25ES	9'-1/2"	17'- 5"	15'- 10"	15'- 0"	13'- 11"	19'- 0"	17'- 4"	16'- 4"	15'- 3"
	11'-7/8"	20'- 10"	19'- 0"	17'- 11"	16'- 8"	22'- 9"	20'- 9"	19'- 7"	16'- 9"

40 PSF Live Load + 20 psf Dead Load									
Joist Series	Joist Depth	Spacing (Simple Spans)				Spacing (Multiple Spans)			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
GPI 15YP	9'-1/2"	16'- 2"	14'- 9"	13'- 11"	13'- 0"	17'- 8"	16'- 1"	15'- 3"	13'- 10"
	11'-7/8"	19'- 4"	17'- 8"	16'- 8"	15'- 7"	21'- 2"	19'- 4"	17'- 4"	13'- 10"
GPI 25YP	9'-1/2"	17'- 5"	15'- 10"	15'- 0"	13'- 11"	19'- 0"	17'- 4"	16'- 4"	13'- 11"
	11'-7/8"	20'- 10"	19'- 0"	17'- 11"	16'- 8"	22'- 9"	20'- 9"	17'- 5"	13'- 11"
GPI 35YP	9'-1/4"	17'- 10"	16'- 3"	15'- 4"	14'- 3"	19'- 6"	17'- 9"	16'- 9"	14'- 5"
	9'-1/2"	18'- 3"	16'- 7"	15'- 8"	14'- 7"	19'- 11"	18'- 2"	17'- 2"	14'- 9"
	11'-1/4"	20'- 11"	19'- 0"	17'- 11"	16'- 8"	22'- 10"	20'- 10"	19'- 8"	16'- 5"
	11'-7/8"	21'- 10"	19'- 10"	18'- 9"	17'- 5"	23'- 10"	21'- 9"	20'- 6"	16'- 5"
	14"	24'- 10"	22'- 8"	21'- 4"	19'- 10"	27'- 3"	24'- 9"	20'- 7"	16'- 5"
	16"	27'- 7"	25'- 2"	23'- 8"	20'- 8"	30'- 3"	24'- 9"	20'- 7"	16'- 5"
GPI 40YP	11'-7/8"	23'- 0"	20'- 11"	19'- 9"	18'- 4"	25'- 3"	22'- 11"	21'- 7"	18'- 1"
	14"	26'- 3"	23'- 10"	22'- 6"	20'- 10"	28'- 9"	26'- 2"	22'- 8"	18'- 1"
	16"	29'- 2"	26'- 6"	24'- 11"	22'- 4"	31'- 11"	27'- 3"	22'- 8"	18'- 1"
GPI 25ES	9'-1/2"	17'- 5"	15'- 10"	15'- 0"	13'- 11"	19'- 0"	17'- 4"	16'- 4"	13'- 11"
	11'-7/8"	20'- 10"	19'- 0"	17'- 11"	16'- 5"	22'- 9"	20'- 9"	17'- 5"	13'- 11"

Notes:

- Span charts are based on uniform loads, as noted above and glued/nailed sheathing;
live load deflection is limited to L/480.
- Maximum spans shown above are clear distances between supports, and are based on composite action with glued nailed sheathing of 3/4" nominal APA rated OSB or plywood. **Minimum end bearing length is 1.75". Minimum intermediate bearing length is 3.5".**
- Reduce spans by 10" for nailed sheathing only.
- Exterior spans of multiple-span joists must be at least 40% of the adjacent span.
- For loading other than shown above, refer to Uniform Load Tables.

TABLE No. 6- GPI 15YP, 25YP, 35YP, 40YP and 25ES LOAD TABLES
GPI SERIES JOIST ALLOWABLE UNIFORM LOADS – FLOOR

Pounds per lineal foot (PLF)

Joist Span (ft)	GPI 15YP				GPI 25YP			
	9'-1/2"		11'-7/8"		9'-1/2"		11'-7/8"	
	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load
6		271		271		273		273
7		233		233		235		235
8		205		205		206		206
9	177	183		183		184		184

10	134	165		165		165	166		166
11	103	150		150		128	151		151
12	81	138	136	138		101	139		139
13	65	127	110	127		81	128		128
14	53	106	89	118		66	119	109	119
15	43	87	74	111		54	109	90	111
16	36	72	62	104		45	91	75	105
17	30	61	52	98		38	76	64	98
18	26	51	44	88		32	65	54	93
19			38	76				46	88
20			33	65				40	80
21			28	57				35	70
22			25	50				31	61
23			22	44				27	54
24									
26									
28									

Pounds per lineal foot (PLF)

Joist Span (ft)	GPI 35YP											
	9-1/4"		9-1/2"		11-1/4"		11-7/8"		14"		16"	
	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load
6		293		301		322		322		322		322
7		251		258		277		277		277		277
8		219		225		243		243		243		243
9		195		200		217		217		217		217
10		175		180		196		196		196		196
11	139	159	148	164		178		178		178		178
12	110	146	117	150		164		164		164		164
13	89	135	94	139	137	151	137	151		151		151
14	72	125	77	129	112	141	112	141		141		141
15	60	117	63	120	93	131	93	131		131		131
16	50	100	53	106	78	123	78	123		123		123
17	42	84	45	89	66	116	66	116	108	116		116
18	36	71	38	76	56	110	56	110	93	110		110
19					48	96	48	96	80	104		104
20					42	83	42	83	69	99	93	99
21					36	72	36	72	60	94	81	94
22					32	63	32	63	53	90	72	90
23									47	86	63	86
24									41	83	56	83
26									33	66	42	76
28											36	71

Pounds per lineal foot (PLF)

Joist Span (ft)	GPI 40YP						GPI 25ES			
	11-7/8"		14"		16"		9-1/2"		11-7/8"	
	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load
6		354		354		354		273		273
7		305		305		305		235		235
8		268		268		268		206		206
9		239		239		239		184		184
10		215		215		215	165	166		166

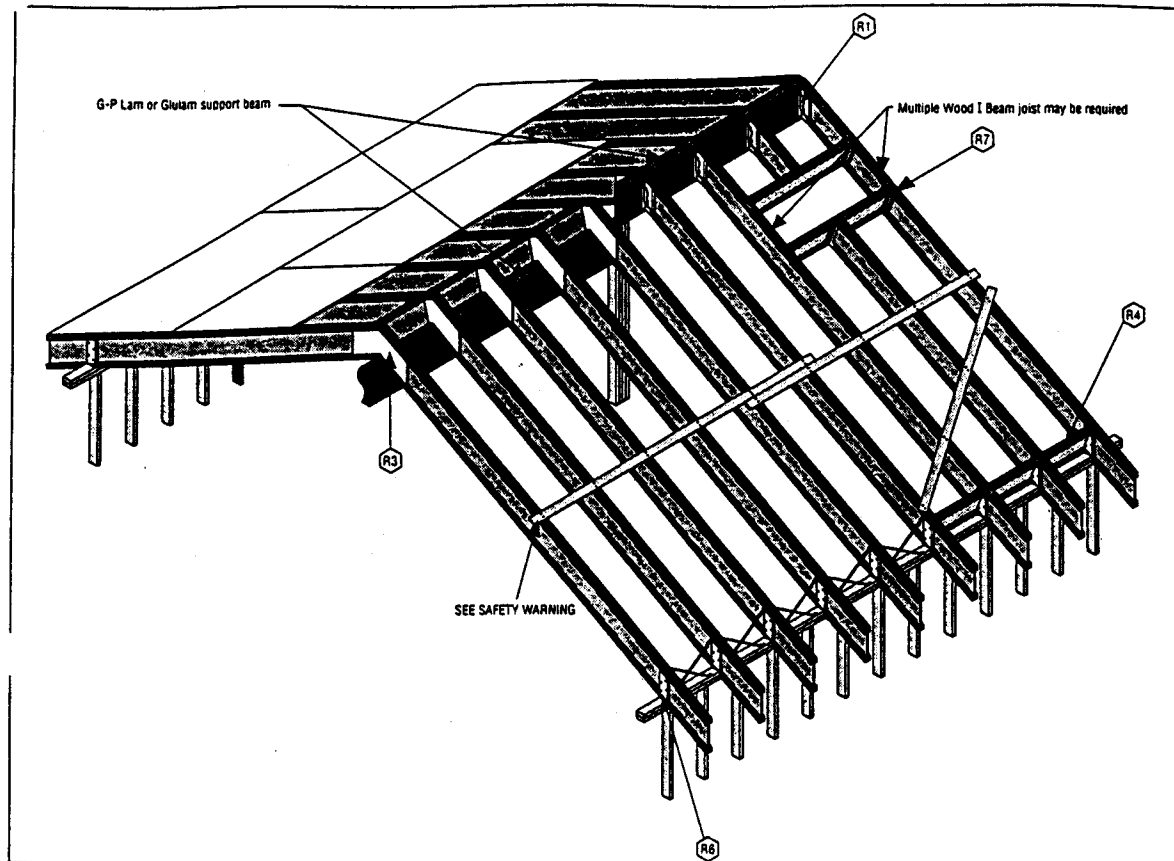
11		196		196		196	128	151		151
12		180		180		180	101	139		139
13		166		166		166	81	128		128
14	138	155		155		155	66	119	109	119
15	115	145		145		145	54	109	90	111
16	96	136		136		136	45	91	75	105
17	82	128	118	128		128	38	76	64	98
18	70	121	101	121		121	32	65	54	93
19	60	114	87	114		114			46	88
20	52	104	76	109	103	109			40	80
21	45	90	66	104	90	104			35	70
22	40	79	58	99	79	99			31	61
23	35	70	51	95	70	95			27	54
24			45	91	62	91				
26			36	72	49	84				
28					40	78				

Uniform Load Table Notes:

1. Total load values are based on joists spaced 24" o.c. or less, with increased moment capacity for repetitive member usage. No increase is taken for composite action of glued and nailed sheathing. Table values are for single joist use only, double joists should be evaluated using design properties.
2. Live load values are based on limiting live load deflection to L/480 and total load deflection to L/240. When live load is not shown, total load governs.
3. Both Live Load and Total Load must be checked to properly size GPI Joists for use in a floor.
4. Spans are clear distance between supports. **Minimum end bearing length is 1.75".**
Minimum intermediate bearing length is 3.5".
5. Allowable loads shown may be used for simple or multiple spans. Exterior spans in multiple span applications must be at least 40% of adjacent spans.

FIGURE NO. 2 – TYPICAL GPI JOIST ROOF FRAMING

FIGURE NO. 2 – TYPICAL GPI JOIST ROOF FRAMING



Roof Framing Notes

1. Except for cutting to length or for providing birdsmouth bearings in accompanying details, top and bottom flanges of Wood I Beam joists shall not be cut, drilled or notched.
2. Concentrated loads shall only be applied to the upper surface of the top flange, not suspended from the bottom flange.
3. Any fastening, resistance to uplift or member not specifically detailed is subject to local approval.
4. When nailing sheathing to top flange, closest spacings should be as follows: Space 8d, 10d, and 12d box nails and 8d common nails no closer than 2" o.c. per row (3" o.c. for GPI 15). If more than one row of nails is used (permitted only on GPI 25, GPI 35, GPI 40YP and GPI 55 series joists), the rows must be offset at least 1/2". 14-gauge staples may be substituted for 8d nails if the staples penetrate the beam flange at least 1".
Maximum spacing of nails is 16" o.c. for GPI 15 Series joists, 18" o.c. for GPI 25 Series joists, and 24" o.c. for GPI 35, GPI 40YP and GPI 55 Series joists.
5. End bearing length must be at least 1 3/4". Intermediate bearings of multiple span joists shall be at least 3.5" long.
6. Engineered lumber must not remain in direct contact with masonry construction.
7. Wood I Beam joists must be restrained against rotation at the ends by the use of rim joists, blocking panels, or cross bridging. To laterally support cantilevered beams, blocking panels must also be installed over supports nearest the cantilever.
8. Additionally, rim joists, blocking panels or squash blocks must be provided under all exterior walls and interior bearing walls to transfer loads from above to the wall or foundation below.
9. The top flanges must be kept straight within 1/2" of true alignment.
10. GPI joist is permitted to be birdsmouth cut at lower end of joist only. The birdsmouth cut shall have full bearing and not overhang the inside face of plate.
11. All roof details are valid up to a 12:12 slope unless otherwise noted.
12. GPI roof joist end bearings shall be laterally supported using GPI joist blocking or cross-bracing.

FIGURE NO. 2 – CONTINUED ROOF DETAILS

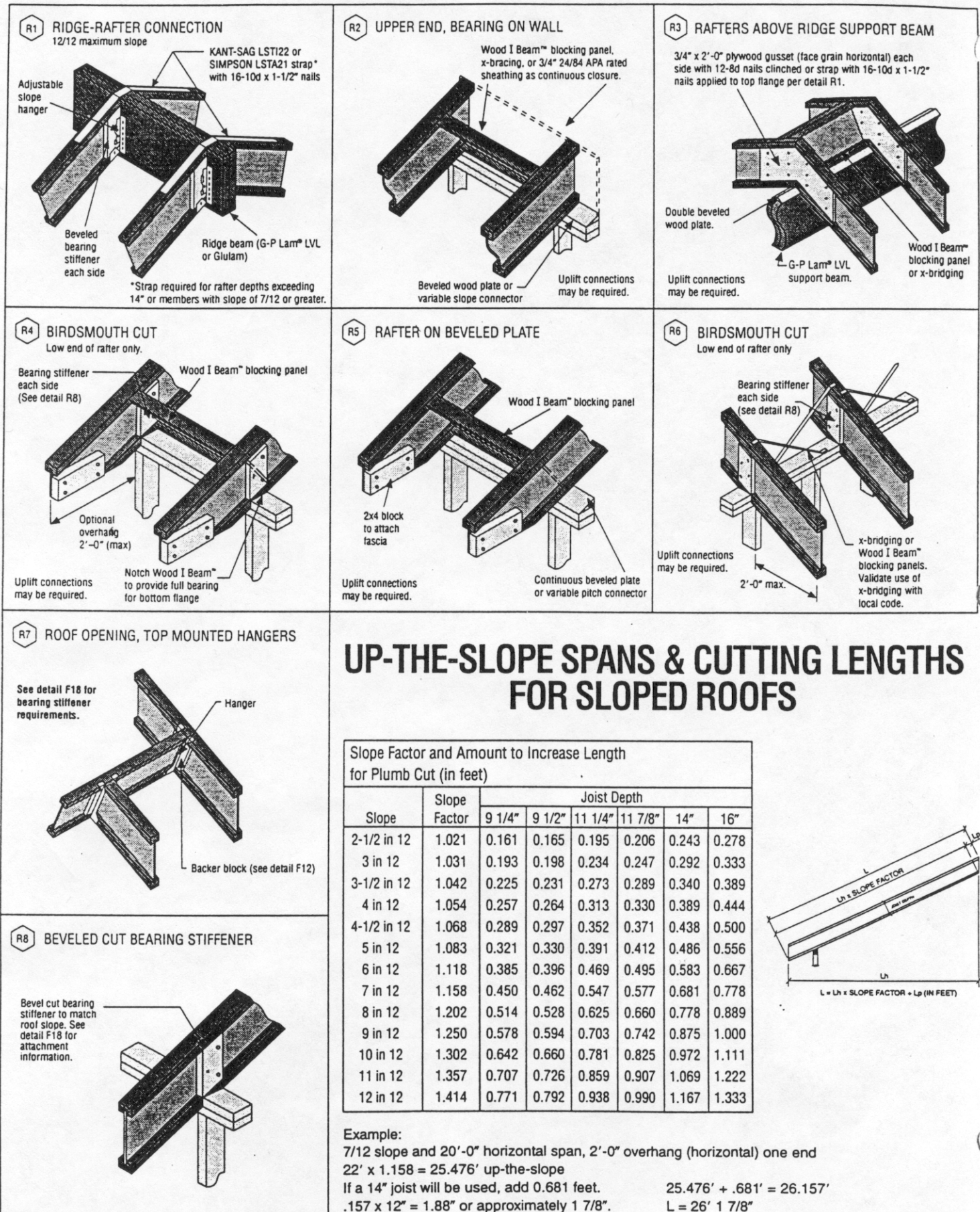


TABLE NO. 7 – GPI 15SP, 25SP, 35SP, and 55SP ROOF SPAN TABLES
Maximum Horizontal Clear Spans

**TABLE NO. 7 – CONTINUED –
Maximum Horizontal Clear Spans**

**TABLE NO. 7 – CONTINUED –
Maximum Horizontal Clear Spans**

**TABLE NO. 7 – CONTINUED –
Maximum Horizontal Clear Spans**

**TABLE NO. 8 – GPI 15SP, 25SP, 35SP, and 55SP LOAD TABLES
ALLOWABLE UNIFORM LOADS – ROOF**

TABLE NO. 8 – CONTINUED
ALLOWABLE UNIFORM LOADS – ROOF

TABLE NO. 9 – GPI 15YP, 25YP, 35YP, 40YP, and 25ES ROOF SPAN TABLES
Maximum Horizontal Clear Spans

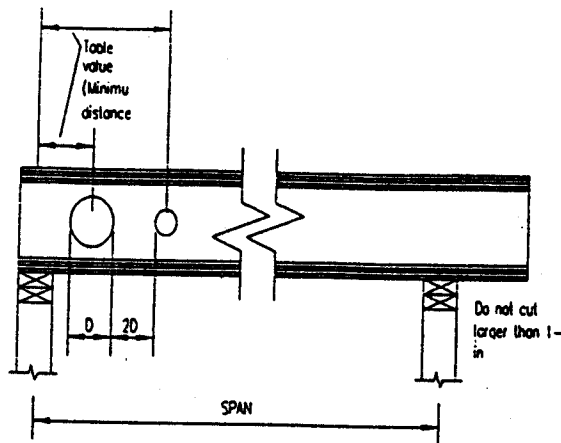
**TABLE NO. 9 – CONTINUED -
Maximum Horizontal Clear Spans**

**TABLE NO. 9 – CONTINUED -
Maximum Horizontal Clear Spans**

**TABLE NO. 9 – CONTINUED -
Maximum Horizontal Clear Spans**

TABLE NO. 10 – GPI 15YP, 25YP, 35YP, 40YP, and 25ES LOAD TABLES
Allowable Uniform Loads – Roof

TABLE NO. 11 – GPI SERIES JOISTS – ALLOWABLE HOLE CHART



INSTRUCTIONS:

1. Find joist depth in left margin and read across to desired hole size to determine column to use.
2. Find joist span in lower table and at column selected above. Read distance from centerline of support to centerline of hole.
3. Table may be interpolated.

EXAMPLE:

14" Wood I Beam™ with 4" hole and 20' span

1. From upper half of table select column C.
2. In the lower half of table, at 20' span and column C, centerline of hole must be 3'-0" from center of support.

JOIST DEPTH	CIRCULAR HOLE DIAMETER "D" (IN.)							
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H
9 1/4"	-	2	-	3	4	5	-	6
9 1/2"	-	2	-	3	4	5	-	6
11 1/4"	-	2	3	4	5	6	7	8
11 7/8"	-	2	3	4	5	6	7	8
14"	2	3	4	6	-	7	8	10
16"	2	3	5	6	7	9	10	11
SPAN (FT.)	MINIMUM DISTANCE FROM SUPPORT CENTERLINE (FT. IN.)							
10	1'-0"	1'-3"	1'-6"	2'-0"	2'-3"	2'-6"	3'-0"	3'-6"
12	1'-0"	1'-3"	1'-9"	2'-6"	2'-9"	3'-6"	3'-6"	4'-3"
14	1'-0"	1'-6"	2'-0"	2'-9"	3'-3"	4'-0"	4'-3"	5'-0"
16	1'-0"	1'-6"	2'-6"	3'-3"	3'-9"	4'-6"	4'-9"	5'-6"
18	1'-3"	1'-9"	2'-9"	3'-6"	4'-0"	5'-0"	5'-6"	6'-3"
20	1'-3"	2'-0"	3'-0"	4'-0"	4'-6"	5'-6"	6'-0"	7'-0"
22	1'-6"	2'-3"	3'-3"	4'-6"	5'-0"	6'-0"	6'-6"	7'-9"
24	1'-6"	2'-6"	3'-6"	4'-9"	5'-6"	6'-6"	7'-3"	8'-6"
26	1'-9"	2'-9"	4'-0"	5'-3"	6'-0"	7'-3"	7'-9"	9'-0"
28	1'-9"	3'-0"	4'-3"	5'-6"	6'-3"	7'-9"	8'-6"	9'-9"
30	2'-0"	3'-3"	4'-6"	6'-0"	6'-9"	8'-3"	9'-0"	10'-6"

Notes:

1. Do not cut or damage flanges.
2. Where more than one hole is desired, the clear distance between holes must equal or exceed twice the diameter of the largest hole, or twice the longest side of a rectangular hole.
3. Except as noted in 1 and 2 above a 1-1/2" hole may be cut anywhere.
4. The longest side of a rectangular hole shall not exceed three-fourths of the allowable round hole diameter.
5. Table is for simple span with uniform loads only.
6. Hole measurements are to centerline of minimum bearing.
7. Where more than 1 hole is required, both must comply with rules for distance from bearing and distance between holes.

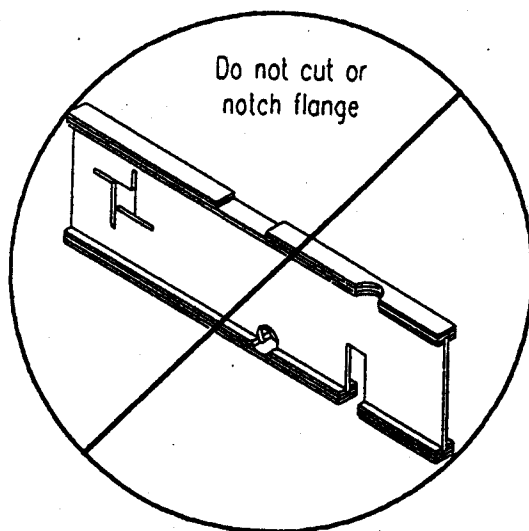
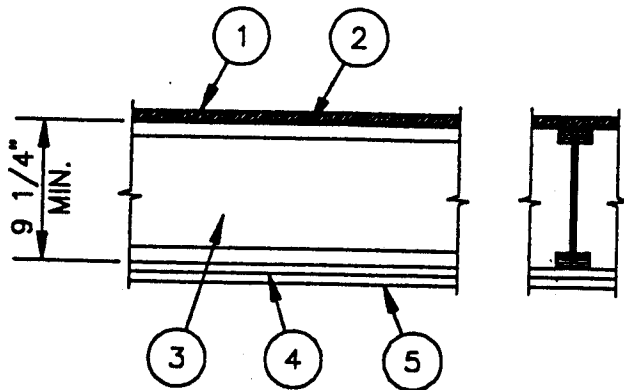
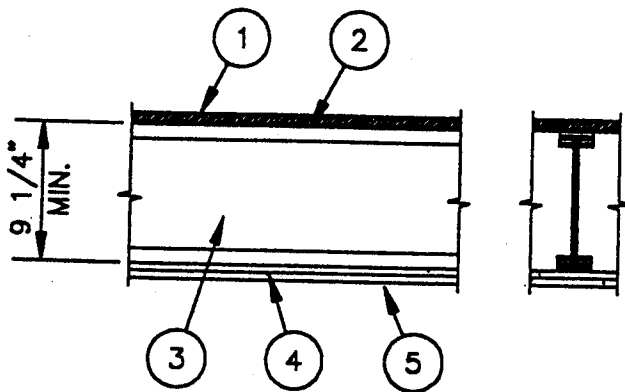


FIGURE NO. 3 – FIRE-RESISTIVE ASSEMBLY DETAILS



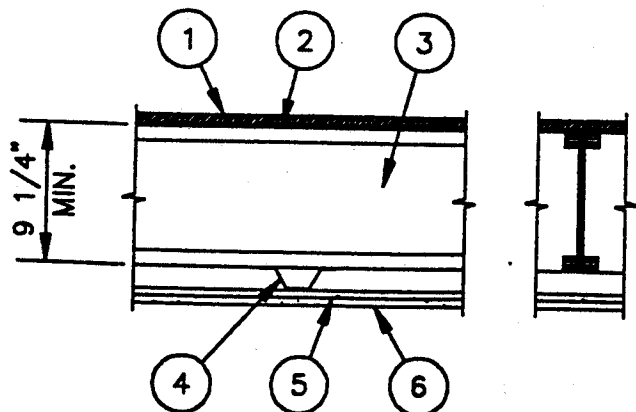
Assembly D-1

1. Single layer floor sheathing.
2. Exterior adhesive (optional).
3. GPI Wood I Beam™ Joist (GPI 15SP, 15YP, 25SP, 25YP, 25ES, 35SP, 35YP, 40YP and 55SP).
4. Two layers of 5/8", type X gypsum wallboard.
5. Finish system (not shown).



Assembly D-2

1. 5/8" or 3/4" tongue-and-groove plywood or equivalent.
2. Exterior adhesive (optional).
3. GPI Wood I Beam™ Joist (GPI 15SP, 15YP, 25SP, 25YP, 25ES, 35SP, 35YP, 40YP, and 55SP).
4. Two layers of 1/2", type C gypsum wallboard.
5. Finish system (not shown).



Assembly D-3

1. 5/8" or 3/4" tongue-and-groove plywood or equivalent.
2. Exterior adhesive (optional).
3. GPI Wood I Beam™ Joist (GPI 15SP, 15YP, 25SP, 25YP, 25ES, 35SP, 35YP, 40YP, and 55SP).
4. Resilient channels (25 gauge galvanized steel) at 16" on center.
5. Two layers of 1/2", type C gypsum wallboard.
6. Finish system (not shown).

TABLE NO. 11 – GPI SERIES JOISTS – ALLOWABLE HOLE CHART

FIGURE NO. 3 – FIRE-RESISTIVE ASSEMBLY DETAILS

LIMITATIONS OF APPROVAL

Installation: Installation of GPI joist shall be in accordance with the manufacturers published installation instructions and this evaluation. If a conflict between the manufacturer's instructions and this evaluation occur, the conditions set forth in this evaluation shall govern.

Identification: All GPI joist shall be identified by means of a stamp indicating the manufacturer's name and/or trademark, plant number, the product trade name, joist series and depth and the third-party inspection agency logo.

An expanded floor load table for GPI Wood I-Beam Joists is on file with the department. The floor load table may be used without submittal of calculations if the following information is shown on plans submitted per project.

The evaluation number, series number identification, spans, spacing, loading conditions, bearing details and other information when required by **s. Comm 20.18** or **50.12** of the current UDC and current Wisconsin Building Code, respectively.

Tables 3-10 are based on simple and multiple span uniformly distributed load conditions for both floors and roofs. Any variation will require submittal of calculations without the use of the load tables for that portion of the project when required by **s. Comm 20.18** or **50.12**. Further, applications not covered by this evaluation and requiring special considerations may be handled by contacting Georgia-Pacific Corporation's Engineered Lumber Technical Services for guidance.

The GPI Wood I-Beam joists are approved for the moment and shear values shown in **Table No. 2**.

The cumulative effects of short-term loads, such as snow, shall be considered in determining the duration of the load. For snow load, no greater duration of load factor than 1.15 shall be used.

Allowable loads and framing details for GPI joist shall be in accordance with the tables and figures printed herein as part of this evaluation.

The design properties are for dry-use conditions and under no circumstances shall the joist be permanently exposed to the weather.

GPI joist flanges shall not be cut except as noted in this evaluation for birds-mouth cuts of rafters. Hole cuts are permitted in the web in accordance with **Table No. 11**.

Georgia-Pacific Corporation's descriptive literature indicating joist composition, dimensions, installation details including locations and details of blocking, bridging, joist cuts and this evaluation shall be furnished upon request to code authorities having jurisdiction.

This approval will be valid through December 31, 2006, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Reviewed by: _____

Revision Date: March 19, 2001

Approval Date: March 14, 2001

By: _____

Lee E. Finley, Jr.
Product & Material Review
Integrated Services Bureau